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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/527,333

03/08/2005

Pierpaolo Fava

007511.00018

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22907 7590 04/01/2009

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EXAMINER

MCADAMS, BRAD

ART UNIT

PAPER NUMBER

2456

MAIL DATE

DELIVERY MODE

04/01/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/527,333	Applicant(s) FAVA ET AL.	
	Examiner ROBERT B. MCADAMS	Art Unit 2456	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-51 is/are rejected.
- 7) ☒ Claim(s) 1-25, 30 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/08/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the application filed on March 08, 2005.
2. Claims 1-51 are pending.

Claim Objections

3. **Claims 4-5 and 30-31** are objected to under 37 CFR 1.75(c) as being in improper form because multiple dependent claims should refer to other claims in the alternative only, and cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

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4. **Claims 1-25** are objected to because of the following informalities: The term “procedure” is used in the claim language. For the purposes of examination, the Examiner will interrupt the term “procedure” as a “method”. Appropriate correction is required.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 26-50 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As to **Claims 26-50**, “A system” is being claimed. However no functional device nor hardware is claimed nor described in the specification. Therefore said “system”

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could embody purely software components. As such, Claims 26-50 are nonstatutory and rejected under 35 U.S.C. 101.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. **Claims 1-17, 20-42 and 45-51** are rejected under 35 U.S.C. 102(e) as being anticipated by *Bearden* (U.S. PGPub. No. 2003/0086425 A1).

As to **Claim 1**, *Bearden* discloses a procedure for the analysis of the access to a data communication network by a user (LAN), characterized by the fact that it comprises the operations of tracing (A1) the traffic of said user (LAN), and identifying a group of networks with which said traffic is mainly handled, by defining (100) relative autonomous systems (AS) (**Traffic is monitored in a network and grouped into autonomous systems. Figure 17; Paragraph 0238**) and tracing the sequence of autonomous systems crossed by said traffic; the tracing operation of said sequence including:

a first stage (B1), to provide the list (102) of the paths of autonomous systems crossed by said traffic to reach each destination (**Path analysis is performed to list the paths of traffic through the autonomous systems to each destination.**

Paragraph 0174) , and

a second stage (B2), to aggregately elaborate said list of paths, outputting a tree representing all the paths of the autonomous systems crossed by the traffic of said user (LAN) to reach all corresponding destinations (**Figures 16-17; Paragraphs 0227-0230).**

As to **Claim 2**, *Bearden* further discloses the fact that it comprises the operation of determining the routing of said traffic on the branches of said tree, and the operation of associating the respective indicative values of the traffic that crosses the branch to the branches of said tree (**Figures 16-17; Paragraphs 0227-230).**

As to **Claim 3**, *Bearden* further discloses the fact that it comprises the operation of using hardware probes to trace the traffic of said user (**SNMP monitoring device 320. Figure 4; Paragraphs 206-208).**

As to **Claim 4**, *Bearden* further discloses the fact that it comprises the operation of configuring said hardware probes to provide information selected in the group consisting of: band use of the individual link, data volume, protocol-subdivision, IP address-subdivision, traffic matrix between the user (LAN) and the network (**Paragraph 0206).**

As to **Claim 5**, *Bearden* further discloses the fact that it comprises the operation of configuring said hardware probes to determine at least one selected item in the group consisting of: sites most frequently visited by the user, main networks to which the user addresses its traffic, and the origin of who connects up to said user (**Paragraph 0213**).

As to **Claim 6 and 7**, *Bearden* further discloses the fact that it comprises the operation of configuring said software agents to trace the traffic through the interface of the router of said user to determine the main traffic lines (**Figure 13; Paragraphs 0178-0183**).

As to **Claim 8**, *Bearden* further discloses the fact that it comprises the operation of configuring said software agents to analyze the operating status of the respective router in terms of CPU load and available memory (**Paragraph 0092**).

As to **Claim 9**, *Bearden* further discloses the fact that it comprises the operation of providing a target machine for the transfer of the statistics obtained by said routers (**Datastore 340; Figure 4; Paragraph 0209**).

As to **Claim 10**, *Bearden* further discloses the fact that it comprises the operation of generating, as the result of said traffic tracing operation of said user, at least one

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parameter selected from the group consisting of: destination networks of said traffic, percentage of traffic involved, pertinent autonomous system **(Paragraph 0213)**.

As to **Claims 11 and 12**, *Bearden* further discloses the fact that said first stage (B1) comprises the operations of inputting a file containing the IP addresses representing the sites most frequently visited by said user and performing a traceroute function for each destination site, by tracing the path to reach this destination **(Paragraph 0213)**.

As to **Claims 13 and 14**, *Bearden* further discloses the fact that in said first stage said tracing operations are carried out repeatedly with a given frequency **(Paragraph 0209)**.

As to **Claim 15**, *Bearden* further discloses the fact that said second stage (B2) comprises the operation of generating a unique tree of paths of the autonomous systems crossed by the traffic of said user to reach all the destinations, the leaves of said tree being indicative of the destination subnetworks of the traffic of said user **(Figures 16-17; Paragraphs 0227-230)**.

As to **Claims 16 and 17**, *Bearden* further discloses the fact that said second stage (B2) comprises the operation of providing, in relation to the list of said autonomous systems crossed by said traffic of said user, at least one parameter from:

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the percentage of use of the autonomous system, a time value for passing through said autonomous systems and a hops value inside the autonomous system (**Paragraph 0225**).

As to **Claim 20**, *Bearden* further discloses the fact that said first stage (B1) comprises the operation of generating a data file (103) comprising information selected from the group consisting of:

order number of the autonomous system following the sequence of IP addresses provided by said traceroute function,

text name of the autonomous system,

identification number of the autonomous system,

number of hops that a single tracing command has measured inside the autonomous system, and

time of permanence in the autonomous system measured by a single tracing command (**Paragraphs 0174-0178**).

As to **Claim 21**, *Bearden* further discloses characterized by the fact that it comprises the operation of performing a plurality of said tracing functions in parallel during said first stage (**Paragraph 0117**).

As to **Claims 22 and 25**, *Bearden* further discloses the fact that said second stage (B2) comprises the operation of storing information of correspondence between

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IP addresses and the data relating to the pertinent autonomous systems (**Paragraphs 0105-0116**).

As to **Claims 23**, *Bearden* further discloses the fact that said second stage (B2) comprises the operation of generating the leaves of said tree as identification of the destination subnetworks of the traffic of said user and the relative branches as identifications of the autonomous systems crossed by the traffic (**Figures 16-17; Paragraphs 0227-0230**).

As to **Claim 24**, *Bearden* further discloses the fact that said second stage (B2) is performed in association with a central memory with a data structure that represents the paths generated in said first stage in the form of at least one aggregated list (**Datastore 340; Figure 4; Paragraph 0209**).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 18-19 and 43-44** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Bearden* (U.S. PGPub. No. 2003/0086425 A1) in view of *Martija* (U.S. PGPub. No. 2002/0169857 A1).

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As to **Claims 18-19 and 43-44**, *Bearden* discloses the method of tracing traffic as previously discussed in Claim 1.

However, *Bearden* does not expressly disclose generating the name of the autonomous system to which the generated IP address belongs using a *whois* remote service.

Martija, in the same field of endeavor, teaches generating the name of the autonomous system to which the generated IP address belongs using a *whois* remote service (**Paragraph 0055**).

At the time of invention, it would have been obvious to a person of ordinary skill in the art to have combined the traffic analysis system as taught by *Bearden* with the using the *whois* service as taught by *Martija*. The motivation would have been to provide increased functionality.

System **Claims 26-42 and 45-50** and Computer program product **Claim 51** corresponds to method **Claims 1-17 and 20-25** and are therefore analyzed and rejected the same as previously discussed to method **Claims 1-17 and 20-25**.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT B. MCADAMS whose telephone number is (571)270-3309. The examiner can normally be reached on Monday-Thursday 6:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. B. M./
Examiner, Art Unit 2456

/Ashok B. Patel/
Primary Examiner, Art Unit 2456

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